ASSIGNMENT 2

Textbook Assignment: "Liquid-Cooling Systems," chapter 2, pages 2-20 through 2-27;
"Combat Systems Alignment (Gun/Battery)" chapter 3, pages 3-1 through 3- 17; and
"Collimation," chapter 4, pages 4-1 through 4-10.

2-1. Demineralizes are used to maintain what type of water purity in an ultrapure state?

1. Primary
2. Alternate primary
3. Secondary
4. Alternate secondary

2-2. The demineralize is sized so that what percent of the system's volume passes through the demineralize every hour?

1. 7
2. 5
3. 3
4. 4

2-3. The submicron filter is used to remove particles that have a size greater than what?

1. 0.5 micron
2. 1.0 micron
3. 1.5 micron
4. 5.0 micron

2-4. What total number of cartridge types are used in the demineralize?

1. One
2. Two
3. Three
4. Four

2-5. When it is near exhaustion, a urine order is emitted by which of the following cartridges?

1. Mixed bed
2. Oxygen removal
3. Organic removal
4. All of the above

2-6. A conductivity cell consists of what total number of electrodes immersed in the coolant flow path?

1. One
2. Two
3. Three
4. Four

2-7. On some purity meters, the coolant is displayed as

1. ohms
2. voltage
3. current
4. resistivity

2-8. When a system is filled with freshwater, it should be allowed to circulate for approximately how many hours before you compare the input and output readings?

1. 6
2. 2
3. 8
4. 4

2-9. A properly operating system can supply water of acceptable purity in what minimum number of hours?

1. 1 to 3
2. 2 to 5
3. 4 to 8
4. 6 to 8

2-10. Oxygen analyzers are installed in some primary systems to measure the amount of dissolved oxygen in the liquid coolant.

1. True
2. False

2-11. If the meter on the oxygen analyzer requires frequent calibration because the meter readings are drifting or changing sharply, the analyzer has a bad

1. sensor
2. cartridge
3. calibration
4. cooling alarm

2-12. When an abnormal condition occurs in a system, the alarm indicates the fault condition by what means?

1. Audible alarm
2. Visual alarm
3. Both 1 and 2 above
4. Sensory alarm

2-13. The system's main alarm panel has a total of how many ground indicator lamps?

1. One
2. Two
3. Three
4. Four

2-14. Either half of the system's alarm panel can independently display which of the following lights, if any?

1. Steady red light only
2. Flashing red light only
3. Steady red light, flashing red light, or no light
4. None; no lights are ever displayed on this panel

2-15. A four-way position switch on the lower half of each alarm module allows you to place the individual alarm module in which of the following modes?

1. Cutout only
2. Standby only
3. Normal only
4. Cutout, standby, normal, and test

2-16. In what position is power removed from the sensor loop to facilitate maintenance?

1. Test
2. Cutout
3. Normal
4. Standby

2-17. Which of the following switch positions simulates an alarm condition?

1. Test
2. Cutout
3. Normal
4. Standby

2-18. What is the best way to extend the life of components and to increase the reliability of the cooling system?

1. Preventive maintenance
2. Corrective maintenance
3. Both 1 and 2 above
4. Shipyard overhaul

2-19. The battery alignment of a ship is accomplished by which of the following distinct alignments?

1. Gun-bore and plane
2. Original (dry-dock) and afloat
3. Missile launcher and fire-control
4. Primary and fire-control

2-20. Battery alignment is based on which of the following concepts?

1. Geometric coordinate system
2. Parallel planes
3. Parallel lines
4. All of the above

2-21. In a complete reference frame, directions are specified by which of the following angles?

1. Train and elevation
2. Target direction only
3. Geometric measurement only
4. Target direction and geometric measurement

2-22. In naval combat systems, what is used as the reference direction?

1. Ship's bowline
2. Ship's sternline
3. Ship's centerline
4. Ship's stormline

2-23. What is one of the most commonly used reference planes because of the ease of using a spirit level to determine the plane?

1. Vertical
2. Horizontal
3. Parallel
4. Perpendicular

2-24. Train angles are measured in what direction from the reference direction on the top of the plane?

1. Clockwise
2. Counterclockwise
3. Bottom to top
4. Top to bottom

2-25. The difference or displacement between two reference frames may be of which of the following types?

1. Linear and angular only
2. Spatial and linear only
3. Angular and spatial only
4. Linear, angular, and spatial

2-26. What are the corrections made necessary by the linear displacement between the reference planes called?

1. Angular displacements
2. Parallax corrections
3. Typical references
4. Static angular corrections

2-27. Corrections arising from reference directions or reference planes not being parallel are called

1. parallax corrections
2. rotational corrections
3. static parallax corrections
4. dynamic parallax confections

2-28. When the angle between the reference planes is relatively small, where is the major difference?

1. In the horizontal plane
2. In the vertical plane
3. In the elevation angles
4. In the bearing angles

2-29. All of the following equipment is commonly used for battery alignment except which one?

1. Alignment sights
2. Frequency counters
3. Benchmarks
4. Dials

2-30. A theodolite is very similar to what other equipment used during alignment?

1. Alignment sights
2. Clinometers
3. Transits
4. Levels

2-31. Clinometers are used for measuring inclinations in what plane?

1. Vertical
2. Reference
3. Horizontal
4. Spatial

2-32. How many types of levels are used in systems alignment?

1. One
2. Two
3. Three
4. Four

2-33. The pointing line in alignment sights maybe of which of the following types?

1. The centerline of a torpedo tube only
2. The propagation axis of a radar beam only
3. The bore axis of a gun only
4. The centerline of a torpedo tube, the propagation axis of a radar beam, and/or the bore axis of a gun

2-34. What is brought into exact alignment with the gun-bore axis when the boresight telescope is inserted into the gun bore?

1. AOS
2. LOS
3. MTI
4. RPP

2-35. In alignments that use fixed, self-contained optics, which of the following equipment is/are permanently mounted?

1. Transit
2. Telescope
3. Theodolite
4. All of the above

2-36. Tram bars are of what two types?

1. Telescopic and rotating
2. Telescopic and rigid
3. Rotating and fixed
4. Fixed and rigid

2-37. What are used as reference marks to establish angular relationships of an element's line of sight to the ship's structure?

1. Dials
2. Tram bars
3. Tram blocks
4. Benchmarks

2-38. Which of the following equipment can NOT properly be considered to be equipment requiring alignment?

1. Dials
2. Tram bars
3. Tram blocks
4. Benchmarks

IN ANSWERING QUESTION 2-39, REFER TO TABLE 3-1 IN THE TRAMAN.

2-39. In alignment considerations, what step pertains to establishing parallelism?

1. 1
2. 5
3. 3
4. 7

2-40. What is the first major alignment step accomplished by a support activity?

1. The establishment of the horizontal planes
2. The establishment of the reference planes
3. The establishment of the vertical planes
4. The establishment of the ship's planes

2-41. The centerline reference plane is used to establish what alignment of all combat systems alignment?

1. Azimuth zero
2. Elevation zero
3. Bearing zero
4. Train zero

2-42. What is the minimum nunber of plates installed as centerline marks?

1. Two
2. Four
3. Six
4. Eight

2-43. Machining is accomplished with the ship afloat and fully loaded. The ship must be kept in this condition for what minimum period of time before starting machining operations to allow ship structural members to adjust to the load?

1. 12 hr
2. 24 hr
3. 36 hr
4. 48 hr

2-44. What is the fourth major step in the alignment procedure accomplished by a support activity?

1. The placement of reference marks
2. The establishment of initial benchmarks
3. The performance of elevation zero alignment
4. The verification of fire-control radar RF optical alignment

2-45. Train and elevation zero alignment is conducted to ensure that all combat systems equipment points to the same point in space when so directed.

1. True
2. False

2-46. Train and elevation alignment between the alignment reference and other combat systems equipment is accomplished by comparing equipment when the optical axes are made parallel by sighting on which of the following elements?

1. Ship's bow
2. Far horizon
3. Celestial body
4. Ship's antenna

2-47. Tram and benchmarks are NOT used to facilitate checking combat systems equipment at a definite train and elevation position.

1. True
2. False

2-48. All of the following records are normally contained in the combat systems/weapons smooth log except which one?

1. Rounds fired
2. Alignment
3. Erosion
4. Weather

2-49. What is radar collimation?

1. The parallel alignment of the radar beam axis only
2. The parallel alignment of the optical axis of the radar antenna only
3. The parallel alignments of the radar beam axis and the optical axis of the radar antenna
4. The displacement of the horn antenna

2-50. What is used to establish the boresight axis?

1. Feed horns
2. Horn antenna
3. Optical telescope
4. Audible measurement

2-51. During radar collimation, the horn antenna is connected to what type of power-measuring equipment?

1. RF
2. HF
3. UHF
4. VHF

2-52. What is the primary radar for the TARTAR GMFCS?

1. AN/SPG-48C/D
2. AN/SPG-51C/D
3. AN/SPG-55C/D
4. AN/SPG-68C/D

2-53. The AN/SPG-51C/D radar uses what band for CWI?

1. D
2. I
3. J
4. X

2-54. Collimation of the Tartar radar consists of determining the error between the_____ beam axis and the boresight axis and the errors between the _____ beams themselves.

1. RF/RF
2. RF/UHF
3. UHF/VHF
4. EHF/VHF

2-55. In addition to determining the relative positions of the RF beam axis, collimation operations should ensure that the beam pattern is in what formation?

1. Asymmetrical
2. Symmetrical
3. Horizontal
4. Oblique

2-56. A radar collimation shore tower is normally in what height range?

1. 130 to 250 ft
2. 140 to 275 ft
3. 150 to 300 ft
4. 160 to 350 ft

2-57. Where on the tower array are the test antennas and the optical targets mounted?

1. On the feedhorn
2. On the metal frame
3. On the side lobe
4. On the highest point

2-58. A total of how many test antennas are used in a tower array?

1. One
2. Two
3. Three
4. Four

2-59. Which of the following test equipment is NOT normally used in collimation?

1. AN/SPM-9
2. AN/SPM-6
3. AN/SPG-51
4. AN/UPN-32

2-60. Shore-tower checks between overhauls may be required by which of the following authorities?

1. PWO
2. CWAT
3. NAVSEA
4. CEO

2-61. In track-receive axis collimation, what method is used to determine the error between the track-receive axis and the borescope axis of the AN/SPG-51C/D radar?

1. Angle-error null
2. Electronic null
3. Mechanical null
4. Tracking angle null

2-62. What minimum number of nulls and the borescope readings should be taken to determine the collimation error between the TR axis and the borescope axis?

1. 10
2. 20
3. 30
4. 35

2-63. What test equipment, if any, is required aboard ship during track-transmit axis collimation?

1. AN/SPM-9
2. AN/SPM-6
3. AN/UPN-32
4. None

2-64. What method of measurement is used to detemine the error between the CWI axis and the borescope axis of the AN/SPG-51C/D radar?

1. Angle
2. Circle
3. Borescope plot
4. Beam-pattern plot